LOIS HUGHES.

Regent Skipper (*Euschemon rafflesia*)
on *Wilkiea macrophylla*

Butterfly & Other Invertebrates Club Inc. Newsletter

ISSUE NO: 29 DATE: JUNE 2003 ISSN: 1326-0006
http://cwpp.slq.qld.gov.au/butterfly

CLUB PLANNING AND ORGANIZING GROUP - 2003

President:	Helen Schwencke	07 3844 6677
Vice President:	John Moss	07 3245 2997
Treasurer:	Rob MacSloy	07 3824 4348
Secretary:	Peter Hendry	07 3206 0048
Newsletter:	Daphne Bowden (bowden@itconnect.net.au)	07 3396 6334
Librarian:	Jean Hope	07 3206 7519
Publicity:	Lois Hughes	07 3206 6229

PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the newsletter. See BOIC Programme.

CONTACT ADDRESS

PO Box 2113, Runcorn 4113, Queensland

AIMS OF ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, fireflies, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

NEWSLETTER DEADLINES

If you want to submit an item for publication the following deadlines apply:
March issue – February 21st
June issue – May 21st
September issue – August 21st
December issue – November 21st

COVER DRAWING

Regent Skipper (*Euschemon rafflesia*) drawing by Lois Hughes

PRESIDENT’S POSTING

With another AGM come and gone our Club is now well into its 8th year. Many thanks goes to all the continuing executive and planning committee members and to all who attended our meeting and contributed to its success. Particular thanks goes to our new executive office bearer, Peter Hendry, for taking on the Secretary’s position.

Many of our recent excursions have been very successful. Particular thanks goes to those members who have hosted visits to their gardens or bush regeneration sites they are involved with. Our most recent excursion to Yugarupul Park became an unexpected success with the publication of a front page article in a local Quest paper that featured a photo of member, Ross Kendall, with a Monarch butterfly on his nose. This drew some 20 locals to the excursion and some new members. We look forward to meeting more of our members on future excursions. If you have a garden or local patch of bush you’d like us to visit please contact Daphne (contact details inside front cover) and let her know.

Helen Schwencke

IN THIS ISSUE

President's Report for 2002 4
Excursion Report - Visit to Anne Collins' property 6
Creature Feature - The Regent Skipper 7
Plant Profile - *Wilkiea huegeliana* 10
Wilkiea macrophylla 11
Creature Note - Papilionidae pupae 13
Have Common Crow butterflies changed status in Sydney NSW 14
Mole Crickets 18
Society for Insect Studies 20
Publications available from BOIC 21
World Wide Web Sites to Watch 22
Other Group's Activities 23
Club Programme June-August 2003 23

PRESIDENT'S REPORT FOR 2002

President's Report for 2002, delivered to the AGM held on 12th April, 2003, at the Indigiscapes Centre, Runnymede Rd., Capalaba

Our significant achievements for 2002 has been the development of the Club's website in July. This website is hosted by the State Library of Queensland's Community Web Publishing Project – http://cwpp.slq.qld.gov.au/butterfly. The site itself was constructed by Jill Barrett with Daphne Bowden. The music was written and produced by Wendy Toussis. Thanks goes to Jill, Daphne and Wendy. The site has been a useful tool for the club and has generated several international contacts for Club members. At last count in February it had produced over 150 enquiries. Thanks in particular goes to Daphne for fielding the questions and distributing them to those best able to answer them. The site won an award from a butterfly website enthusiast in the States, and has been considered to be of such good quality that it is to be included in Australia wide website archives of sample sites.

Another major achievement has been the compilation of a comprehensive list of host plants for the south-east Queensland regions. This work was substantially undertaken by John Moss, based on previous lists and compiled by Daphne Bowden into a highly successful small booklet. This booklet joins a growing stable of booklets on various aspects of butterfly gardening that are proving very popular.

As we enter our 9th year as a Club, we have grown to over 150 at last count, with more joining regularly. Much of this growth has come from the continuing high quality newsletter, and the talks given to other groups and stalls and displays held by Club members.

We have now produced our 28th newsletter. It has now been in production for seven years, and has been growing and developing. We regularly receive great feedback about it. It aims to strike a good mix of scientific accuracy with popularity and speaking in lay people's language. Again, this feat couldn't be possible without the dedicated commitment of our contributing members. The thanks in particular goes here to Daphne for pulling the materials together, Lois for her delightful illustrations and covers, and John for scientific referencing and accuracy checking. Some of the articles from the newsletter are also published on the website.

With the newsletter we count as a major success our growing numbers of contributors. The last four issues had articles from 18 people. Particular thanks goes to our regulars, John Moss, Frank Jordan, Lois Hughes and Bob Miller for keeping a very constant stream of articles and excursion reports coming in. Further thanks goes to James Beale, John Nielsen, Murdoch de Baar, Martyn Robinson, David Sleep, Bob James, Peter Hendry, Jean Hope, Colleen Raboczi, Ross Kendall, Scott Toohey, Felix Jenkins and Pam Hall, and further to everyone else who writes letters, makes observations or otherwise shares their knowledge or questions with us.

As our newsletter is actually much more than simply a newsletter we are looking for a new name. Any ideas would be greatly appreciated.

Our excursions/ functions for the year have included:

- Our winter 2002 series of slide shows and “show and tell” evenings
- Garden visits to John Moss’s Capalaba property, June’s Beerwah garden, Denise’s property at Munruben with adjacent forest, Carmen’s Paradise Point garden and local parks, Ross Kendall’s garden and butterfly house at Indooroopilly and Anne Collin’s “Butterfly Brilliance” property at Loganholme. These visits have been generally well attended. At times they have been followed by a short visit to other butterfly habitat nearby.
- Talks by Frank Jordan to the Society for Growing Australian Plants Regional Meeting, Wildlife Preservation Society Qld Bayside and Samford Branches, and Alexandra Hills Primary School;
  by John Moss to the Toowoomba Field Naturalists, and other groups; and,
  by Bob Miller who gives talks to a variety of groups on the Sunshine Coast.
- Stalls and displays held at the Redlands Indigiscapes Expo, BCC Green Days (4), Society for Growing Australian Plants Spring Flower Show, RANA Frog Day, and other open days. The main workers at these occasions have been Frank Jordan, Lois Hughes, Daphne Bowden and John Moss.

Thanks goes to all those who hosted our garden visits and acted as excursion leaders, organisers and those who staffed the various stalls and displays.

The Club has an ongoing involvement in a number of projects including the Dutton Park Butterfly Habitat with the Dutton Park Scout Group, and revegetation projects with B4C which involves replanting various butterfly host plants in the Bulimba Catchment. The Club has continued to work on a threatened species project to assist with the reintroduction of the Varied Swordgrass Brown in Yugarpal Park.

Throughout the year our quarterly planning meetings to conduct the business of the Club and plan the program and newsletter have continued successfully. These meetings frequently become an interesting exchange of information. All members are welcome to attend. These meetings are routinely advertised in the Club’s programme.

My heartfelt thanks goes to the ongoing support the club has received from its members, and most particularly its management members, Rob MacSloy (Treasurer), John Moss (Vice-President), and our hard working, consistent and dedicated Planning Committee including Frank Jordan, Daphne Bowden, and Lois Hughes. In particular our systems for allowing information to flow well are managed by Rob, who along with being Treasurer has undertaken a number of secretarial functions. Further thanks goes to Daphne for her secretarial support and to Lois for her efforts as the Club’s

Publicity Officer. We will be welcoming Peter Hendry to the role of Secretary, being vacated by Frank Jordan. Thanks goes to Frank for undertaking this function.

Thanks further goes to Terri Wolf who has undertaken the task of being the Club's librarian since its early days. Terri is now handing this task to Jean Hope. Our thanks goes to Jean for taking on this role.

Our plan to feature member's butterfly and wildlife gardens has been working well. If you have a garden or are involved in a regeneration group that we could visit as a Club please let us know.

The continuing challenge for the year ahead is to reach out to more of our members to become involved in Club activities and to develop activities that are attractive to members and the general public. We made the first edition of our Member's Directory available to all members who had agreed to be listed. A further edition will be produced this coming year. The intention with the Directory is to enable members to network with each other to share information and invertebrate experiences. As the club grows in membership it would be good if people living near each other would form local groups.

Wishing you all a successful and prosperous 2003.

Helen Schwencke - President

EXCURSION REPORT

Anne Collin's Garden & Butterfly Brilliance, 23rd March, 2003

Our visit to Anne's garden and special occasion butterfly business came close to being a complete washout with massive downpours in the Loganholme area the day before. However, after many dark days, the morning of our excursion arrived bright and sunny.

Anne's front garden features a large flight cage in the shape and colours of a Monarch butterfly caterpillar, with beds of nectar flowers, making a pleasant setting for a function. However our interest was quickly drawn to the backyard garden. This features an eclectic mixture of butterfly host plants, too many to mention. Many showed recent caterpillar activity, including that of some Tailed Emperor caterpillars, but these had all flown the coop.

On display were a large number of pupating caterpillars and chrysalises. A flight cage of newly emerged Monarchs also drew attention. This activity constitutes Anne's business of supplying butterflies for weddings and other special occasions.

After a previous article about the trade a number of people rang the Wildlife Preservation Society. Some were against the idea, a similar number of others wanted to know where to get the butterflies. For anyone with any concerns an article from The Age newspaper of Friday, 8th February, 2002 should allay this. To quote directly:

> "there would not be any adverse impact on the environment. They're only going to feed on flowers – they're not going to do any damage" (Robert Anderson, a keeper at the Melbourne Zoo's Butterfly House). The President of the Australian Entomological Society, Andrew Austin, agreed … "The only potential danger is if those species had been introduced to Australia illegally, but the Monarch butterfly occurs naturally".

The article also allays any concerns about whether the practice could be cruel to the butterflies.

> "The butterflies are put into containers – either individually or in groups – that are cool and dark, which means that the cold-blooded creatures go into a natural hibernation. When the packages are opened, the warmth and light wakes them and they fly out".

Promoting invertebrates will only benefit this group of creatures in the long run. Very gradually interest will be increased in our "spineless" co-inhabitants of this planet.

Anne's hospitality and her delicious butterfly biscuits were greatly appreciated.

Helen Schwencke

CREATURE FEATURE

The Regent Skipper (*Euschemon rafflesia*)

This endemic butterfly, as well as arguably being our most spectacular Skipper, is unique in the "butterfly world" insofar as it has a characteristic only found in moths. The male (only) has a wing coupling device comprising a frenulum (a strong bristle near the base of the hindwing) and a retinaculum (hook like membrane) on the underside of the forewing. The device couples the wings together during flight. Strangely the female does not have this device and it, as well as all other "butterflies", just rely on fore and hind wing overlapping to assist flight.

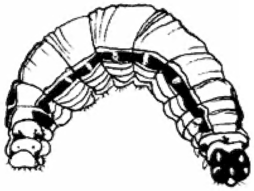
The Regent Skipper ranges along the east coast with a northern subspecies (*alba*) found from Cooktown to Townsville, with a population west of Mackay, and the southern subspecies from west of Miriam Vale to about Seal Rocks (near Myall Lakes) in N.S.W. There is a large healthy population along Tingalpa Creek in the Redland Shire near my residence.

They feed on plants in the family Monimiaceae which includes at least two species of *Wilkiea* in the "south" namely *Wilkiea macrophylla* and *W. huegeliana* and at least one species of *Tetrasynandra* in the "north", namely *Tetrasynandra pubescens.*

Braby (2000) quotes early references giving *W. macrophylla* as the preferred host plant in southern Qld. and northern N.S.W. and lists *W. huegeliana* only as host plant at Kuranda N.Qld. and Port Macquarie N.S.W. The general consensus now is that *W. huegeliana* is the preferred host plant in the "south".

In addition, Garry Sankowsky, in his CD-ROM, Butterfly Gardening, points out that *T. pubescens* is the preferred host plant on the Atherton Tableland and not *T. laxiflora* (with much larger and softer leaves) as was listed previously. There is unconfirmed information that a further species of *Wilkiea* (*W. austroqueenslandica*) is utilized in the Border Ranges region of NSW/Qld. and other species of *Wilkiea* that occur in north Queensland (including *W. huegeliana*) may also be utilized..

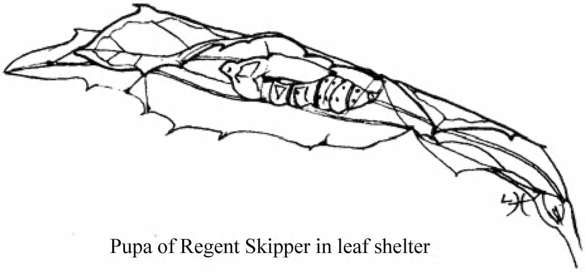
The larvae make characteristic shelters on the host plant by drawing overlapping leaves together with contracting silk and fastening them with thick silken stays. Lois Hughes' excellent drawing clearly illustrates one such shelter but many different versions of this basic design are found. I have a 35mm photographic slide collection showing about a dozen different configurations.



Regent Skipper larva

The purpose of the shelters is obviously for protection against the elements, predators and parasites. If the shelter is interfered with the larva will often violently wriggle its body to warn off a possible attacker, although it has no other means of offensive weaponry, other than the expulsion of partly-digested gastric contents from its mouthparts.

Although hiding in the shelter throughout the day, it emerges soon after dusk to feed on the leaves of its host plant. Contrary to earlier observations (Braby 2000, etc), I have found that the first leaves devoured are the young new growth (although these appear only to be fully expanded leaves). Once these are gone, it then utilizes the tough old growth leaves, usually devouring one leaf completely before changing to a new one. First instar larvae often don't have the luxury of new growth leaves, but make do by eating the epidermis only of the upperside of the leaves. They are often found clinging to the underside of leaves on a silken pad, until they are large enough to make a shelter.



Pupa of Regent Skipper in leaf shelter

Pupation occurs in the larval shelter, with the pupa suspended upside down by silken threads attached to its cremaster (tail end) and by a Y-shaped silken girdle around its mesothorax (middle section).

The adults fly in sunshine in the early morning and mid to late afternoon, in clearings in the forest. At other times of the day they can be observed settled on foliage, often low down, with wings outspread, creating a showy splash of yellow, red and black colour against the background green. A full written description of the colour patterns of wings and body would not do justice to this species. Good colour illustrations are to be found in most Australian butterfly books, including Braby (2000), Common and Waterhouse (1972 and 1981) and McCubbin (1971).

Although found in both upland and lowland tropical and sub-tropical rainforest, in southern areas it is commonly encountered along creek margins in closed riparian forest where its host plants grow.

There are substantial colonies of Regent Skippers on the Sunshine Coast in the lowlands areas from Peachester, through Landsborough, Mooloolah, Eudlo and Palmwoods along the Stanley, Mooloolah and Maroochy rivers. Both *Wilkiea macrophylla* and *W. huegeliana* are utilized in this area, the preference (confirmed by Bob Miller) being for the latter species. However at Tingalpa Creek in the Redlands, as only *W. huegeliana* occurs, it is the local host plant.

At Mt. Tamborine in the Gold Coast Hinterland where both *W. huegeliana* and *W. austroqueenslandica* occur, Doug White reports that he has only found larval shelters on the former plant.

At Mt. Warning in the Tweed Valley of northern N.S.W. all three species of host plant occur together, but the writer has only found shelters on *W. huegeliana*. At Port Macquarie, in central north coastal N.S.W., there is a small colony of the skipper on *W. huegeliana.* There does not appear to be any other *Wilkiea* species growing in that area, which includes North Brother Mountain at Laurieton to the south.

The Port Macquarie site, which is the type locality for this butterfly (as described by W. Macleay in 1827), was portrayed by Charles McCubbin (1971) in a classical painting of butterfly and host plant against a backdrop of the coastline where it was first discovered, and where it still occurs to this day. McCubbin noted that the site was "a pitifully small, narrow strip, a couple of hundred yards long between the road and the sea". This remains the case today, as a group of 5 BOIC members who visited the site in April 2001 would recall.

Although McCubbin correctly illustrated the local form of *W. huegeliana* as the host plant, it was erroneously identified on the caption as *W. macrophylla*! The form of *W. huegeliana* at that site is quite different from "typical" *huegeliana*, with large ovate to orbicular leaves for which the name "*macrophylla*" might well have been appropriate in other circumstances, and which may well have been the reason for the confusion. The *W. huegeliana* at nearby North Brother Mountain is of the "typical" form.

As well as the usual form of the skipper with yellow panels, patches and spots on both wings, there exists a form where the yellow is replaced by white. A specimen of this form (which gave the northern subspecies its name "*alba*") was found on the BOIC excursion to Mt. Tamborine in January 2002 (see BOIC Newsletter No. 24 March 2002).

Unfortunately due to the international convention on scientific names, we are stuck with *E. rafflesia alba* for the northern subspecies and *E. rafflesia rafflesia* for the southern subspecies. The main difference between the two is the extent of colouration on the underside – more extensive in the northern subspecies. The white form is found in both populations and may be the result of the absence of both genes which are responsible for the colour yellow.

It is possible to get colonies of this butterfly started if sufficient host plants are grown in shady understorey on large enough plots of suitable land, preferably but not necessarily, near watercourses where the butterfly may already occur. There have already been some successes with introductions of the butterfly to these sites.

John Moss

References:

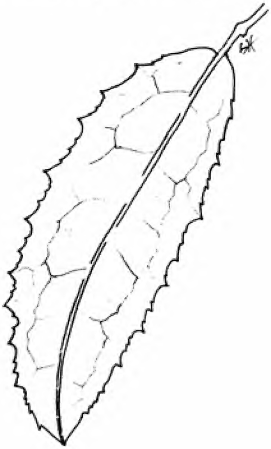
Braby, M.F. (2000): Butterflies of Australia, their identification, biology and distribution. CSIRO Publications.
Common, I. and Waterhouse, D. (1972, 1981 edn's): Butterflies of Australia. Angus and Robertson Publishers
McCubbin, Charles (1971): Australian Butterflies. Nelson Publishers Melbourne
Sankowsky, G. (2002): CD-ROM "A Garden on the Wing – Attracting Birds and Butterflies to the Garden". Zodiac Publications

PLANT PROFILE

Veiny Wilkiea (*Wilkiea huegeliana*)

Wilkiea huegeliana is a bushy understorey shrub or small tree growing to 6 metres and may occasionally be multitrunked. The stiff leathery leaves which can be lanceolate to ovate in shape have prominent veins on the furry textured undersides. They vary in size but are up to 5 cm long by 6 cm wide, often with coarse marginal teeth, and to our eyes appear most unpalatable!

Flowering occurs in summer and the fragrant yellowish flowers (about 3-4 mm wide) are in clusters. These are followed by clusters of ovoid, shiny green to black fruit about 1.5 by 0.7 cm resembling olives, attached by a short petiole (stalk) to a leathery receptacle. These ripen in autumn and winter. The distribution of this endemic shrub is discontinuously from north-eastern Qld. to south-eastern N.S.W. in coastal rainforests, especially along watercourses. It will grow in cultivation and makes a hardy garden plant which is not fussy about soil type, provided drainage is satisfactory. It can be used as an indoor pot plant as it will tolerate full shade.


Leaf of *Wilkiea huegeliana*

There are two other species of Wilkiea endemic to rainforests of south-east Queensland and northern N.S.W., namely *W. macrophylla* or "Large-leaved Wilkiea" (illustrated on cover) and *W. austroqueenslandica* or "Smooth Wilkiea". The former, with a continuous distribution from north-east Qld. to far northern N.S.W., has large glossy stiff leaves with prickly, marginal teeth, and its colourful new growth makes it a most attractive garden or potted specimen. There is a good description of this plant in the following article. Less is known about *W. austroqueenslandica* which occurs in upland subtropical to temperate rainforests at Mt. Tamborine and Mt. Warning and in the McPherson and Border ranges. Like the former it also makes a striking garden or potted specimen.

Leaves of
Wilkiea austroqueenslandica

John Moss

The following 2 articles are reprinted, with permission, from the SGAP Qld. Region Bulletin, December 2000.

Wilkiea macrophylla (Cunn.) A. DC.

FAMILY: Monimiaceae
DERIVATION: *Wilkiea*: after Dr. David E. Wilkie, MD, vice-president, Philosophical Institute of Victoria (which later became the Royal Society of Victoria);
macrophylla: from the Greek 'macros' large and
'phyllon',
a leaf, meaning large-leafed.
COMMON NAME: Large-leafed Wilkiea

PRONUNCIATION: WILL-kee-a mack-row-FILL-A

This is a stiff, fairly open shrub, 2-4 metres in height, with large, oblong, glossy dark green leaves, 8-25 cm long, that are thick and rigid with prickly margins. Insignificant yellow-green flowers in short sprays in the leaf axils appear from autumn to spring. Fruits are black, oval, 1.2 cm long, seated on a fleshy stalk. They ripen in autumn and winter.

It occurs naturally as an understorey plant in rainforests from central Queensland to northern New South Wales. It requires a well mulched soil and partial shade. Can be fairly slow growing.

This is an interesting foliage plant, with its large, stiff, toothed leaves and colourful new growth. It should be grown more often in gardens. Also suitable as an indoor plant.

Jan Sked

****

Large-leaved Wilkiea – *Wilkiea macrophylla*

Large-leaved Wilkiea (*Wilkiea macrophylla*) is a worthy choice for a favourite understorey plant.

While there are hundreds of species of grand trees that struggle for that all important place in the sun, including vines which bend the rules to achieve this, there are far fewer species that find competition beneath them (or more correctly above) and choose to live life in the slow lane. These unassuming plants are easily accessible for us tree buffs to ID and none are more obliging than *Wilkiea macrophylla* with its large serrated leaves.

My small remnant is on the southern limit of the range of *W. macrophylla*, yet I am fortunate to have a relatively large population. Two specimens that have benefited from the poisoning of the Camphor Laurel canopy have flourished in recent years and produced hundreds of the black ovoid fruits that are only infrequently produced within the forest interior.

I have found these seeds ideal for direct seeding on other parts of my property. While I recommend this to others, I have a word of caution. Peeling a few seeds of their thin skin will stain your fingers, but more than a few dozen will push the rind under your fingernails and be quite unpleasant!

Wilkiea are host plants for the rare Regent Skipper butterfly (*Euschemon rafflesia rafflesia*). The larvae of the Regent Skipper can be readily found by checking the plant for obvious signs of browsing. Such plants may have two leaves stuck together. The inhabitant of such a shelter may be a spider, but as often as not, you can find the Regent Skipper larvae, variable in colour, depending on their developmental stage, but recognizable by the black and yellow markings.

This is a neat party trick when showing friends and foreign visitors through the rainforest, although it may not impress the caterpillar. I don't know how long it would take to rebuild the structure, but during this time the larvae may be vulnerable to predation; so I suggest that this practice be limited.

Wilkiea are great plants and I highly recommend that cabinet timber woodlot owners with newly formed canopies, but bare understoreys, get hold of some seeds and push them under the soil to effortlessly add some diversity to their forest.

Ken Dorey

CREATURE NOTE

Papilionidae pupae

Papilionidae pupae suspend themselves either vertically or sloping backwards by fixing the anal end to a support and by a sling of silk which passes over the dorsum of the pupa. The puzzle of exactly how the sling is made and positioned was solved by observations of Fuscous and Orchard Swallowtails reared in translucent plastic containers.

Orchard Swallowtail butterfly caterpillars grow to about 60mm in length before pupating. Quantities of green liquid faeces are released just before pupating, reducing the caterpillar's size significantly. A place is then selected to pupate on the side of the container. A common problem is infestation with the tachinid fly, which may interfere with the normal sequence of pupation but usually kills the pupa once it is fully established.

When the butterfly emerges from the pupa it must be able to hang either vertically or sloping backwards so that the wings may hang free whilst they are expanded. If the wings are prevented from hanging free they will be permanently deformed and the butterfly may not be able to fly.

The caterpillar crawls up the side of the container and proceeds to produce silk in very fine threads from its spinneret just beneath its head and mouth parts. The head moves from side to side as more and more silk is laid down as it gradually moves upwards until an area of about 55 by 15mm is covered. It then turns upside down and lays down a dense pad of silk at the bottom. Turning upright again the rear end is then fastened to the thickened pad of silk at the bottom with the tiny hooklets called crochets on the anal prolegs. The abdomen is held vertical by the crochets of the 4 pairs of prolegs and the thorax bends backwards and to the side to make the sling, which will support the pupa. A thread of silk is stuck to the previously laid down pad of silk to one side. It then moves its head and thorax in an arc of a circle while producing silk, which is stuck to the pad on the other side. This movement is repeated 20 or more times as successive threads are produced, gradually thickening the loop of silk. The threads adhere to each other but not to the caterpillar. At first the thread is so thin as not to be visible with the naked eye but as it thickens it becomes clearly visible and changes colour from white to black. The thread is pulled tightly as each extra thread of silk is added. When the thread is strong enough the caterpillar has to solve the problem that the loop of silk, which will support the pupa, is to the front, so the loop has to be manoeuvred over its head to a position on the dorsum of the thorax. This is done by ducking its head below the loop and with its fore legs manoeuvering the sling downwards. With the loop of silk in position and now slack, it assumes the shape of a comma and rests for a day or two while it prepares for its final moult.

When ready to moult the skin splits over the thorax and then shrinks back towards the anal prolegs aided by wriggling movements until it is held up at the anal end attachments. Meanwhile the pupa bends backwards, hardens and the loop of silk becomes attached to what is now called the metathorax, thus supporting the pupa. It changes from colour from green to brown as the pupal skin hardens. Once supported the anal crochets detach from the pad of silk, the shed skin falls away and a structure called the cremaster, which also has hooklets, becomes attached to the silk pad. It hangs there for about 3 weeks before the butterfly emerges.

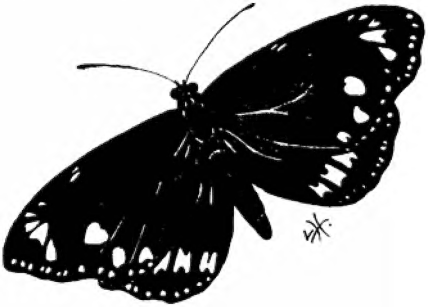
Hilton and Enid Selvey

ARTICLES OF INTEREST

Have Common Crow Butterflies (*Euploea core corinna*) changed status in Sydney, NSW?

By Martyn Robinson, Australian Museum, 6 College St., Sydney NSW, 2010

Around 1966 I first started regarding butterflies as something interesting (I think they were classed by me as ‘frog food’ before then). From then until now I have been noticing what appears to be a change in status of the Common Crow Butterfly from a rather rare summer visitor to a common Sydney species – perhaps even a year round resident in some areas.



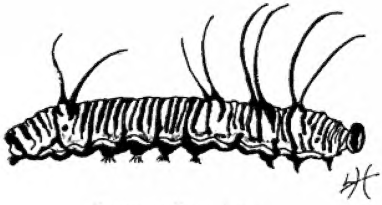
Common Crow (***Euploea core corinna***)

Common Crows have a wide distribution and are found across SE Asia. In Australia they are found in the northern half but they extend southwards during summer, in some years, to Victoria and South Australia.

They are typical Danaids with spotted bodies, striped caterpillars, and poisonous diets in the larval stages (resulting in unpalatable adult butterflies) but around Sydney they are most famous for their attractive caterpillars and spectacular silver or gold pupae. The 'dark grey/black with white spots' adult butterfly is relatively plain in comparison to its younger stages. Nevertheless it is easily raised and is often used as a butterfly for mass releases at weddings and other social events. The Common Crow Butterfly has been described as being mainly a tropical species. It is also quite long lived having been recorded living for eleven to thirteen weeks in warmer weather but up to nine months if overwintering. The adult butterflies are not fussy as far as nectar sources are concerned and will feed from many plants including ***Bursaria* spp., *Parsonsia* spp., *Hoya* spp, *Buddleija* spp., *Lantana* spp., *Impatiens* spp.**, mints, lavenders and various roadside weeds. There is a wide range of food plants recorded for the larvae as well. These are in a number of families including Asclepiadaceae (eg ***Asclepias curassavica, Hoya australis***), Apocynaceae (eg ***Mandevilla laxa, Trachelospermum jasminoides***), and Moraceae (eg ***Ficus benjamiana, & F. coronata***). They are all plants with a noxious milky white sap which is poisonous to many animals. Like the related and similarly coloured Wanderer caterpillars (***Danaus plexippus***), Common Crow caterpillars often chew halfway through the leaf stalks reputedly to limit the amount of noxious sap flowing into the leaf they're eating at the time!

Around Sydney the most common larval food plant is the Oleander ***Nerium oleander*** – especially heavily pruned ones. A neighbour in Narraweena had a heavily pruned white flowered Oleander which in the summer months supported many ***E. core corinna*** caterpillars. This has since been removed but larvae have also been found on various ***Ficus*** species, ***Hoya***s, and ***Carissa ovata*** nearby.

Only around 50% of the caterpillars, on any of the food plants, survived pupation because a parasitic fly (possibly ***Winthemia neowinthemoides***) managed to lay eggs on the rest despite the poisonous compounds the caterpillars contain. A single fly egg was clearly visible on the sides of later instar larvae but it didn't seem to affect them until pupation had occurred. Infected pupae would turn black or develop blackish patches, and then a hole in the pupal side would be found indicating where the fly larva had emerged. These flies were often seen on the foodplant foliage — presumably awaiting the opportunity to lay on a suitable sized host. Overall, as far as street and urban plantings go, the Oleander is slightly less common than it used to be – partly for perceived health concerns and partly because it's out of fashion. This makes the apparent recent southerly abundance of ***E. core corinna*** even more difficult to understand. This isn't unique to this species or even Australia, as scientists have noticed a number of butterflies in various parts of the world changing their distributions in recent years – sometimes changing altitude as well.



Common Crow larva

(http://www.theherald.co.uk/news/archive/7-1-19103-23-39-55.html

In all probability it's the climate change influence which is allowing this mainly tropical species to exist further south for longer periods. In Narraweena, NSW, for example, in the early '90s Common Crows were much less common and mostly noticed during summer. During the past 2 years the mild winters have allowed several adult individuals (around a dozen or more) to overwinter in a sheltered north facing backyard. The butterflies were observed whenever the weather was sunny – either feeding on the flowers of various winter flowering weeds or basking in patches of sunlight on foliage or damp rock faces. On overcast days the butterflies were very rarely noticed. On 16th May 2002 an aggregation of Common Crows was reported to the Australian Museum's Search and Discover centre from nearby Dee Why on an Evergreen Alder.

Large overwintering aggregations of these butterflies have often been recorded including at Griffith in Brisbane, Qld. (http://www.abc.net.au/science/scribblygum/July2000/default.htm).

In the 1960's Common Crows were regarded as ***UN***common in the Hornsby area where I grew up. They only appeared during hot summer weather, often coinciding with northerly winds, and if the butterflies were scarce the caterpillars and pupae were scarcer still despite the abundance of Oleander, which seemed to be grown in most school yards as well as urban gardens and nature strips. Although Max Moulds (AM Entomology Dept.) says he's still not seeing any around Hornsby, nor has Margaret Humphrey (Taronga Zoo) in Asquith I have seen them visiting ***Buddleija*** spp. in nurseries and gardens in nearby Mt Colah. Since the 1980's it seems to me that the numbers of Common Crows in Sydney have both increased and remained for longer in some areas. They can now be occasionally seen for much of the year in sunny weather although they are still much more abundant once Spring and Summer roll around. Caterpillars and pupae are also regularly seen. Pupae are the most common stage reported to Search and Discover and identification enquiries have been recorded from January to April with one pupal record from 17th July 2002! This distribution might be somewhat patchy reflecting perhaps different suburban climates/conditions. According to the Australian Museum enquiry records they have been recorded from Balgowlah, Dee Why, Manly, Neutral Bay, Northbridge, Phegans Bay, and Sydney (?) with all except the Dee Why records being of pupae. They have been seen around Heathcote over summer while a former resident of nearby Engadine, Robert Miller, during the years 68-79 said that *'My memory of the Common Crow around that area is that they were non existent, even in the summer months. I had to actually go to places like Prospect Reservoir, in summer, in order to get specimens.'* According to Allen Sundholm *'To my knowledge the Common Crow butterfly is well established in the McMaster's Beach area on the central coast just north of Sydney. It is also well established on Chapman's Hill at Wyong, and undoubtedly similarly elsewhere in that* *region due to the suitability of that region's climate.*' He also *states ' from 1984 until early 1996 I lived in Sydney's eastern suburbs and collected at various places in that area, and never saw a single specimen.'* Max Moulds also records permanent breeding colonies just north of the Hawkesbury River at Umina and Avoca Beach and this is only about 35 kilometres to the Sydney GPO as the (Common) Crow flies. John Peters from Ryde, NSW has kept records for his garden since 1964 and his records seem to support the theory that the species is becoming more common and staying for longer in his area. His first record is a single specimen on 05/02/'70 then 17 records over the unusually hot and humid 1973/74 summer, one in 1975 and one in 1987 with nothing in between. Then the sightings started becoming more common starting from one again in 1991. In his words *'The earliest record prior to 2000 was in December, through to the latest in mid May (ie 1973-74) but generally from January to April. However since Feb 2000 I have encountered Crows as early as July & August (and v.fresh specimens too) through to Mid June. Almost all of my early records were of single individuals but of late I am seeing two and three crows at a time. Like you, I concluded that Crows were overwintering in Sydney and then breeding to produce the Crows that continued to appear. I put this down to the effects of global warming. The sudden influx of Crows into Sydney in 1973-74 did not result in an overwintering population however the similar event of 2000-01 probably did produce the butterflies that appeared in early 2001-02 and so on. It has long been known that populations of some northern butterflies extend their range to the south [**during hot summers**] sometimes reaching Sydney and beyond (as opposed to what is generally called migration). Although this is what used to happen in the case of Crows they now seem to be well established.'*

Clearly the Northern Beaches with their mild winters are popular over time but fluctuations can cause temporary distribution changes. During the hot humid summer weather of 1974 in South Australia a breeding colony was even found in suburban Adelaide with active adults in March!

There have been several changes affecting animal and plant distribution over the last few decades – most of them detrimental eg frog declines, pilchard die-offs, coral bleaching, ***Phytophora*** outbreaks, the southwards march of the Cane Toad, and the inexplicable disappearance of European Wasps from Sydney. Suggested links to climate change and global warming have been made before and the evidence seems to be growing. Butterflies have been considered very good indicators of climate changes particularly in the UK, due to their high mobility and visibility. Their distributional limits are thought to be due more to climate than food availability. This may well be the case with the Common Crows where the food was abundant but colder temperatures in previous winters prevented them from becoming resident. It's nice to think therefore that an increase in the range of this attractive butterfly may be one of the few good side effects of what is to date a damaging global phenomenon.

Acknowledgments:
I'd like to thank Max Moulds and Shane McEvey for checks and suggestions to this text, the Search and Discover section of the museum, and all the butterfly enthusiasts who provided their quotes, records, and recollections used above.

Web References: -
http://www-staff.mcs.uts.edu.au/~don/larvae/nymp/core.html
http://users.chariot.net.au/~rgrund/core_ds.htm
http://www.geocities.com/brisbane_butters/Crow.htm
http://flyaqis.mov.vic.gov.au/cgi-bin/texhtml
herehttp://www.changingclimate.org/content/articles/article/data/section_3/article_7/part_15/
http://www.utexas.edu/admin/opa/news/99newsreleases/nr_199906/nr_warming990609.html
http://www.theherald.co.uk/news/archive/7-1-19103-23-39-55.html
http://butterflywebsite.com/Articles/warming.htm
http://www.usatoday.com/weather/climate/wc61099.htm
http://www.abc.net.au/science/scribblygum/July2000/default.htm

Martyn Robinson

Ed. Note: John Moss reports that when he lived in Sydney in the 50's and 60's the Common Crow was considered to be a vagrant from the north, as it was rarely seen and was quite an exciting find. The two faded specimens in his collection are labeled "Earlwood-Girrahween Park – 1960's". Unfortunately the exact dates of capture were not recorded. John also records a male Common Eggfly collected about that time which had purple but no white on the upperside and which a butterfly "authority" suggested was a Blue-banded Eggfly (unfortunately the specimen was lost, so we are unable to confirm its identity).

****

Mole Crickets (*Gryllotalpa*)

Two new singers have been attracting attention to themselves in the West lately. They are two species of mole crickets that I refer to as the 'shiny black' and 'matt brown' (see images). They have become abundant in Perth suburbs and some south-western regional centres seemingly only in recent years. The insects are rather invasive, burrowing in lawns, garden beds and potted soil and they enter houses and fall into swimming pools. The entomology collections of the W.A. Museum and the W.A. Department of Agriculture have no specimens of these species collected earlier than the mid 1990s and my suspicion is that they may have been introduced from elsewhere.

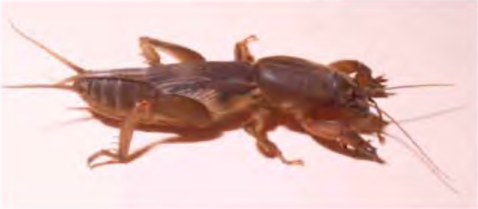
On doing a search for information on mole crickets on the internet, I came across a web-page created by Peter Chew in Brisbane (http://www.geocities.com/brisbane_hoppers/MoleCricket.htm) which provides information on the "Common Mole Cricket", asserting that it is "everywhere in

Brisbane". The insect pictured in the article makes a good match for Perth's 'shiny black' mole cricket. The web-page also includes a recording of this insect's strident chirping song and it sounds exactly like the song of the Perth species heard for an hour or two commencing at dusk. Many people mistake the call of this insect for the call of a frog as it is comparatively deep for a cricket and emanates from the ground. Enquiries with the Queensland Museum revealed that their collection has only one recently collected specimen of this "Common Mole Cricket". Could it be that this mole cricket is a new arrival in Brisbane also?

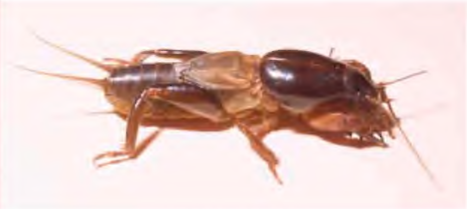
I wonder if members of the Butterfly & Other Invertebrates Club might be able to shed any light on this subject. Have you been aware of any mole crickets in your garden? If you come across specimens it would be helpful if you could forward them to the Queensland Museum (or to me) as it will help to build a picture of the distribution of the insect(s). Mole crickets are not popular with collectors and so museum collections tend to have relatively few specimens. I would be interested to correspond with anyone who may have useful information.

As to how these insects could have spread, their liking for rich damp soil means that potted nursery plants provide them with good homes and very likely some have been transported around the country by the nursery trade and/or soil suppliers. Where they have originated from is yet to be determined.

My contact details are as follows: E-mail terry.houston@museum.wa.gov.au telephone (08) 9427 2742 (messages can be left at any hour); postal address - Western Australian Museum, Francis Street, Perth WA 6000.



"Mat brown" female



"Shiny black" male

Photographs provided by Terry Houston

Note: The 'shiny black' specimen is a male and lacks well developed hind wings; the 'matt brown' specimen is a female and has strap-like folded hind wings extending over the end of the abdomen. This is a usual sexual difference in the mole crickets.

Terry Houston

SOCIETY FOR INSECT STUDIES

The Society for Insect Studies is a non-profit organization formed in 1989 for the mutual benefit of its members. Membership of the Society is open to anybody interested in insects and closely related subjects. The Society members interests span a wide range of entomological topics including collection/observation, photography, ecology, life histories, genetics, pollination, taxonomy, illustration, encapsulation, breeding, species relationships and much more too numerous to list.

Our members, which currently number more than 100, are both professional and amateurs and come from all age groups and walks of life. The Society motto "Preserve the Habitat" reflects a major objective; - the conservation of insects by habitat preservation. The Society's more general aims are the dissemination of new information and to provide a venue that encourages friendship and fellowship of like-minded souls. The Society achieves this by means of meetings, lectures, exhibits, excursions, publications and a general involvement with related organizations.

The Society has its own constitution and is managed by an honorary council elected annually from its members.

The Society holds six bi-monthly meetings per year on the second Tuesday of the even months (February, April, June, August, October and December). Meetings are usually held at the Australian Museum, Search & Discover Room (2nd Floor) Corner College and William Streets Sydney. Visitors are welcome and applications to join can be made at the meeting.

Meetings are occasionally substituted with excursions notified in the circular. Meetings usually include a guest speaker on an entomological subject, exhibits and contributions by members, details of projects and upcoming excursions, followed by light refreshments and social interaction.

All members receive a bi-monthly circular posted within two weeks prior to the next general meeting. The circular contains details of upcoming speakers, summaries and reports from previous speakers, media items of interest, book offers, events and contributions from members, website reviews, information from other publications, members notices and much more. All members are encouraged to submit items for consideration.

The Society arranges excursions of interest to members. These can include visits to other institutions or organizations (Quarantine, CSIRO, Forestry other Museums/collections) and field trips to destinations near and far.

The Society support like-minded organizations by participation in displays, open days and awards ceremonies etc. Organizations that we have supported have included

Sydney Waters Streamwatch program, National Science Week, various Councils, Taronga Zoo etc.

Membership of the Society is just $15.00 p.a. (January/December). Application for membership can be made in writing to the Society at 12 Park Avenue Roseville or by phoning Graham Owen on (W) 02 9256.6701, Mobile (0418) 971 458 or Kathy Collins on (02) 4375 1132.

AVAILABLE FROM BOIC

Grow More Butterflies –
A selection of articles published in previous Newsletters $3.30 plus $1.10 postage

Butterfly Gardening –
A series of articles published in previous Newsletters $2.20 plus $1.10 postage

Butterfly Host Plants of SE Qld. and Nth. NSW –
A comprehensive list of host plants for this region $5.50 plus $1.10 postage

The Butterfly Alphabet Poster which shows all the letters of the alphabet and numerals 1-9 appearing in the wings of butterflies and moths. This poster can be viewed by visiting www.butterflyalphabet.com
Cost: Non-members $25 plus $5 postage Members $23 plus $5 postage

The Domino Poster - A guide for field, school or garden with 250 Australian butterfly illustrations in colour
Cost: Non-members $10 plus $1.10 postage Members $8 plus $1.10 postage

Lifecycles of the Swallowtail Butterflies of South East Queensland, compiled by the BOIC
Cost: Non-members $10 plus $5 postage Members $6 plus $5 postage

These items can be obtained from BOIC, PO Box 2113, Runcorn, 4113.
Would any of these be a gift idea??

YOUR CLUB'S MEMBERSHIP DIRECTORY

In February, 2002 your Club's organising committee decided to start encouraging members to network with each other in their local areas, and across their areas of interest. To this end we have now produced a membership directory. Only those members who have given us their permission have been included in the directory.

If you would like to be in a future issue of the directory please email Daphne at bowden@itconnect.net.au or phone: 07 3396 6334

WORLD WIDE WEB SITES TO WATCH

Included here are the websites of members or associates of our Club. If your web site is not included and you wish it to be, please contact bowden@itconnect.net.au

http://www.bulimbacreek.org.ourbrisbane.com/content/?id=68 - Bulimba Creek Catchment Coordinating Committee
http://environment.prsc.qld.gov.au/PRCA/ - (Pine Rivers Catchment Association)
http://www.greeningaustralia.org.au/GA/QLD/ - (Greening Australia)
http://brisbane-stories.powerup.com.au/boondall/default.htm - (Boondall Wetlands)
http://www.entrypoint.to/Members/barung - (Barung Landcare)
http://www.mountgloriousbutterflies.com/ -(Mt. Glorious Biological Centre)
http://www.theca.asn.au/ - (Theca -The Hut Environmental and Community Assoc.)
http://www.agric.wa.gov.au/ento/waiss/ - (W.A. Insect Study Society)
http://www.wildlife.org.au/ - (Wildlife Preservation Society)
http://www.acay.com.au/~pmiller/group/insect.studies/ - (The Soc. for Insect Studies)
http://www.australia.travelmall.com/travelmall/attraction/Brisbane%20(QLD)/Brisbane%20Botanic%20Gardens%20Mt%20Coot-tha - (Mt. Coot-tha Botanical Gardens)
http://www.butterflyhouse.com.au/ - (Coffs Harbour Butterfly House)
http://www.butterflybrilliance.com.au/ - (Anne Collins)
http://www.butterflyencounters.com.au - (Ross Kendall)
http://www.zen.uq.edu.au/entomology/ins-info/index.htm - (Lindsay Popple)
http://www.rainforestmagic.com/ - (Garry Sankowsky)
http://www.qvmag.tas.gov.au/zoology/invertebrata/invertebrata.html - (Tasmania's Invertebrate Newsletter)
http://www.usyd.edu.au/macleay/larvae/ - (Don Herbison Evans)
http://users.bigpond.net.au/ozbox/ - (Frank Box)
http://www.redland.qld.gov.au/indigiscapes.cfm - (Redlands IndigiScapes Centre)

BACK ISSUES

Back Issues of the Club Newsletter are available at a cost of $2 each plus postage (1-2 copies $1.10 - 3-6 copies $1.50).

OTHER GROUP’S ACTIVITIES

On **Sunday 20th July** Coochie Mudlo Island is holding its annual Matthew Flinder’s Landing and Market Day. This is an annual event which comprises a mock landing by Matthew Flinders, a Market Day and Parade with floats and displays by various organizations. **BOIC will be having a display at this event.**

Wild Flower Spectacular presented by the Society for Growing Australian Plants – Qld. Region will be held on **Saturday 9th August** from 9 am to 5 pm and **Sunday 10th August** from 9 am – 4 pm in the Auditorium, Mt. Coot-tha Botanical Gardens, Mt. Coot-tha Road, Toowong. A wide range of native plants will be for sale. Admission Adults $3, Children free. **BOIC will be having a display at this event.**

BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

Our Winter Programme commences

When: Thursday, 26th June, 7.30-9.30pm
Where: Redlands IndigiScapes Centre, 17 Runnymede Road, Capalaba
What: Slides – Mistletoes and other butterfly host plants. Show and tell.
Contact: Daphne 07 3396 6334 or email bowden@itconnect.net.au

---

Sunday 20th July – Coochie Mudlo Island Matthew Flinders Landing and Market Day
We will be holding a display at this event (see Other Group’s Activities)

Saturday 9th and Sunday 10th August – SGAP Flower Show
We will be holding a display at this event (see Other Group’s Activities)

Planning and Management Meeting

What: Our planning meetings are informative and interesting. As well as planning our activities we share lots of information. All members welcome.
When: Wednesday 13th August, 2003 at 7.30 pm
Where: To be advised
Contact: Daphne 07 3396 6334 or email bowden@itconnect.net.au

---

Our Winter Programme continues

When : Thursday, 28th August, 7-30-9.30pm
Where: Redlands IndigiScapes Centre, 17 Runnymede Road, Capalaba
What: A talk on African butterflies
Contact: Daphne 07 3396 6334 or email bowden@itconnect.net.au

If you plan to attend any of the above events please contact the person indicated in case, for some unforeseen circumstance, the event has had to be postponed or cancelled.

DISCLAIMER

The Newsletter seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The Newsletter is merely a platform for people to express their views and are not necessarily those of the BOIC. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

ACKNOWLEDGMENTS

Producing this newsletter is done with to the efforts of:

- Those members who have sent in letters and articles
- Lois Hughes who provides illustrations including the cover
- Daphne Bowden who works on layout, production and distribution
- John Moss for scientific referencing and proof reading
- Helen Schwencke who developed the overall design

We would like to thank all these people for their contribution

ARE YOU A MEMBER

Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible.
Membership fees are $12.00 for Individuals/Schools and $17.00 for family membership.
Would you please advise bowden@itconnect.net.au if you get/change an email address.

Butterfly and Other Invertebrates Club Inc.
c/- PO Box 2113
RUNCORN Q. 4113

Next Meeting: Thursday 26th June, 2003 - Mistletoes and other butterfly host plants – See Programme for details